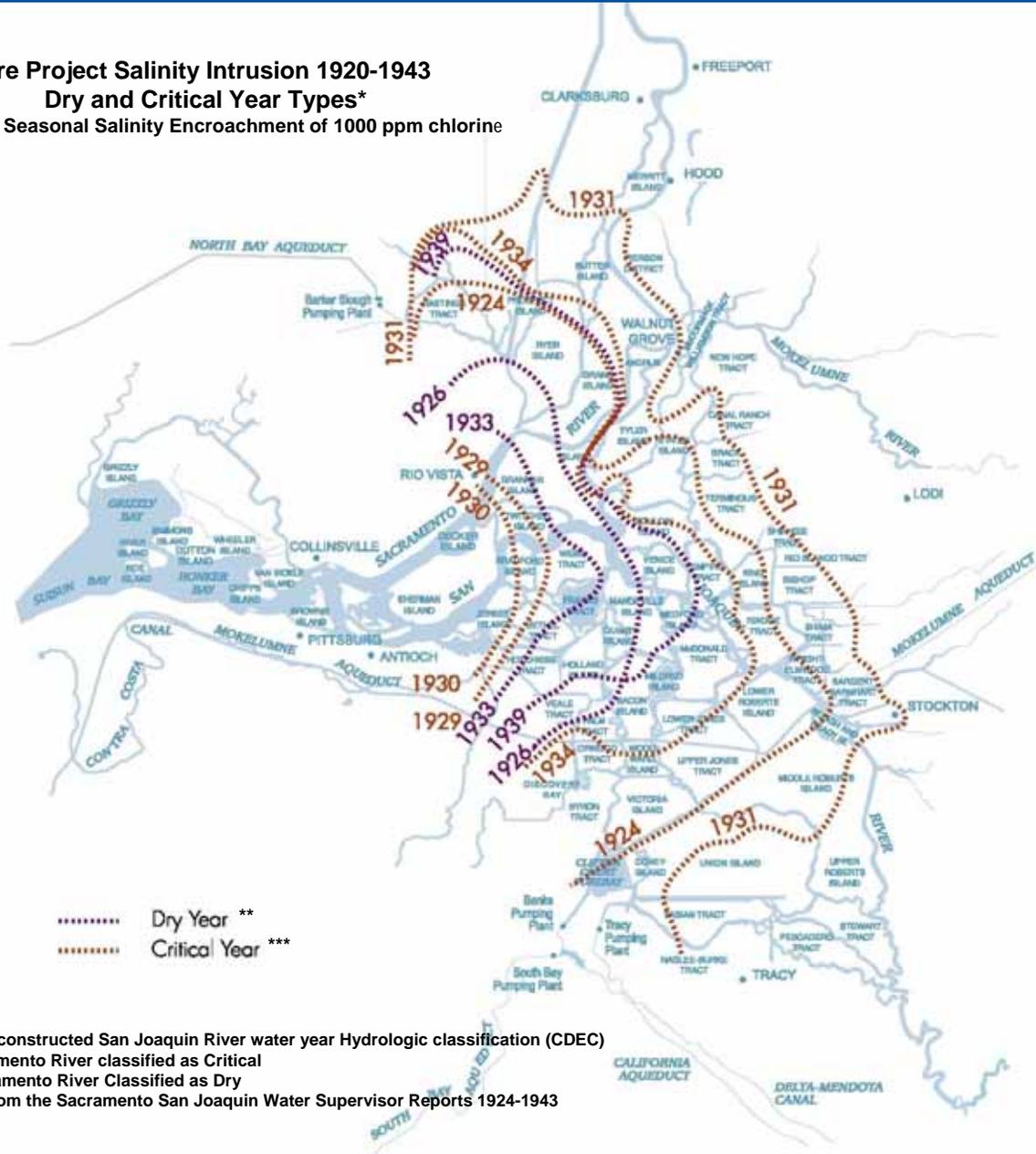


Pre-Project Salinity Concerns in Delta

- Investigation of Delta salinity initiated in 1920's due to increasing seasonal salinity intrusion
 - Dry hydrology
 - Increasing agricultural diversions upstream reducing inflow
- In dryer years inflow insufficient to meet Delta consumptive use demands
 - greater salinity intrusion
- 1931 Salinity intrusion well into South Delta
 - 1000 ppm chloride in Middle River near Old River
 - Significant Crop damage due to salinity throughout Delta

Pre Project Salinity Intrusion 1920-1943
Dry and Critical Year Types*
 Maximum Seasonal Salinity Encroachment of 1000 ppm chlorine



*Based on reconstructed San Joaquin River water year Hydrologic classification (CDEC)

**1933 Sacramento River classified as Critical

***1930 Sacramento River Classified as Dry

Developed from the Sacramento San Joaquin Water Supervisor Reports 1924-1943

D1641 South Delta Salinity Compliance Locations 2000-2006

- 1.0 EC South Delta salinity objectives implemented in D1641 12/29/99
- 0.7 EC in all year types effective April 2005
no dry/critical year type relaxation
- seasonal salinity range at three stations
0.10 – 1.08 EC
- Seven Year Average Salinity at three stations
0.45 – 0.6 EC

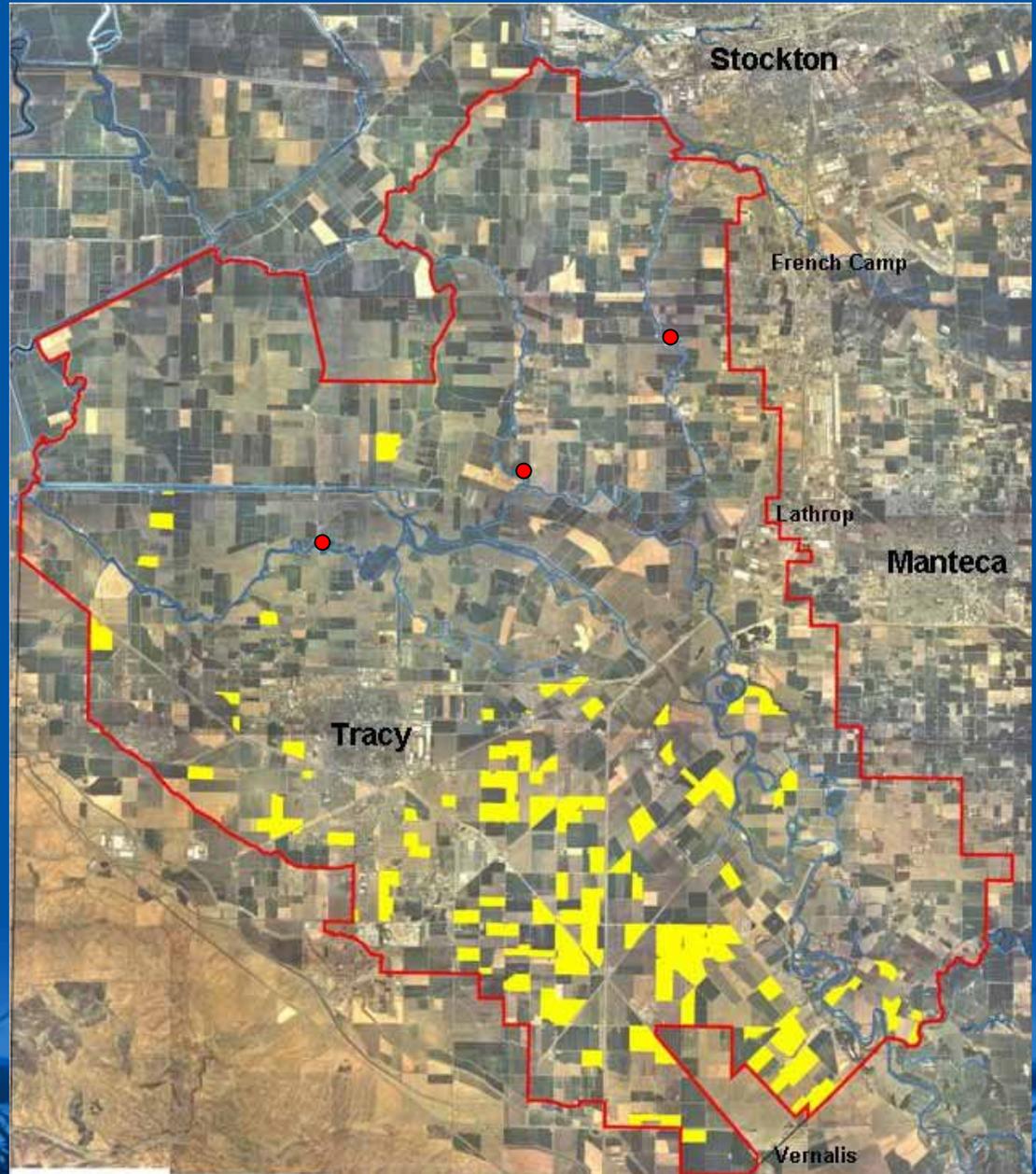
Establishing Reasonably Protective South Delta Agricultural Salinity Objective

- 0.7 EC objective adopted to protect beans
- 1.0 EC objective in place through March 31, 2005
 - Historic acreage/location bean production in SDWA?
- SDWA total cropped acreage ~ 121,000 acres
- SDWA bean acreage estimates
 - 1978 Bay/Delta plan ~2400 (2%)
 - 1988 DWR Land Use ~ 7,630 (6.3%)
 - 1996 DWR Land Use ~ 8,712 (7.2%)

1988 Land Use Survey Bean Fields

7,630 acres
6.3% of SDWA cropped acreage

- D1641 compliance location

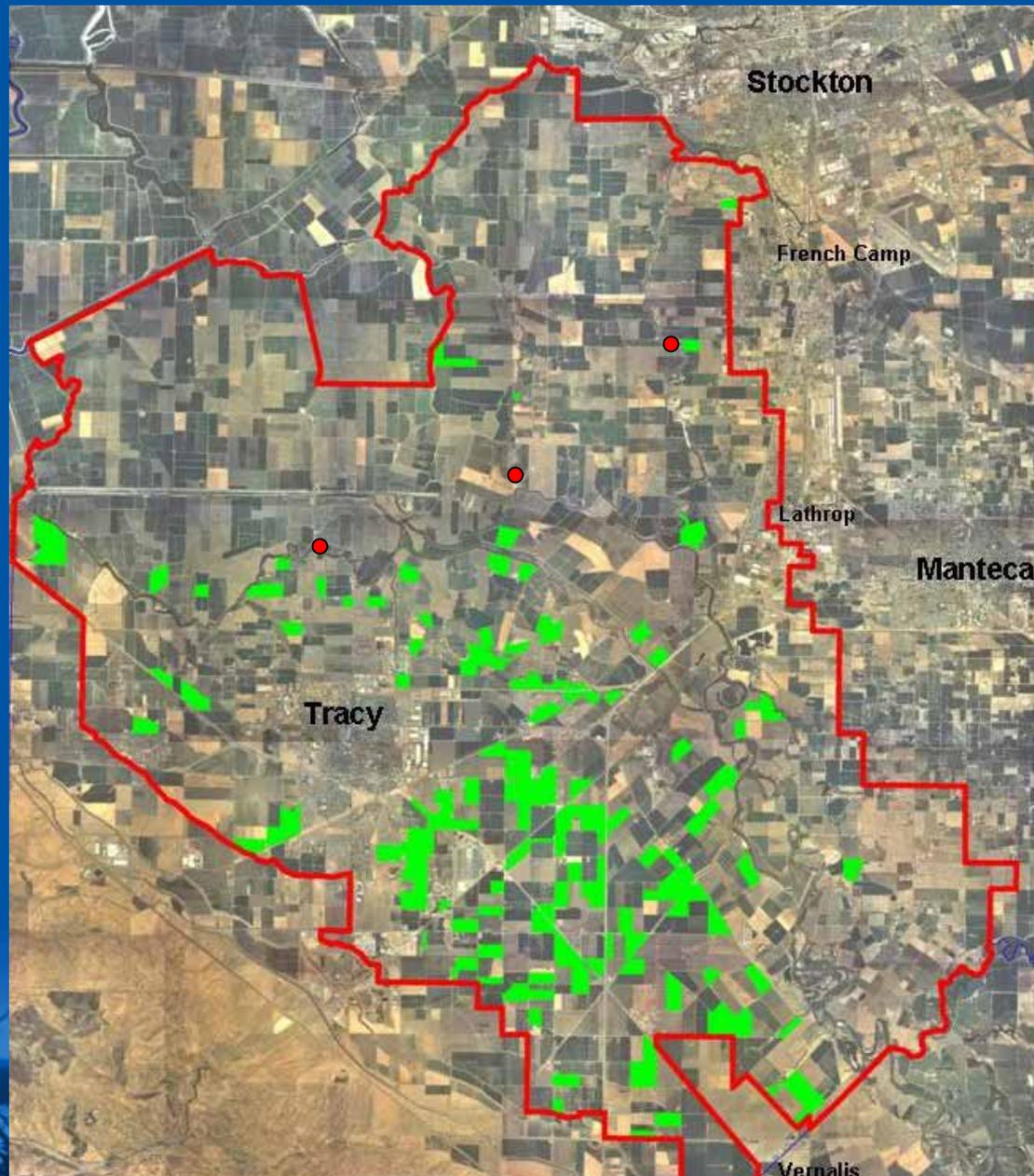


1996 Land Use Survey Bean Fields

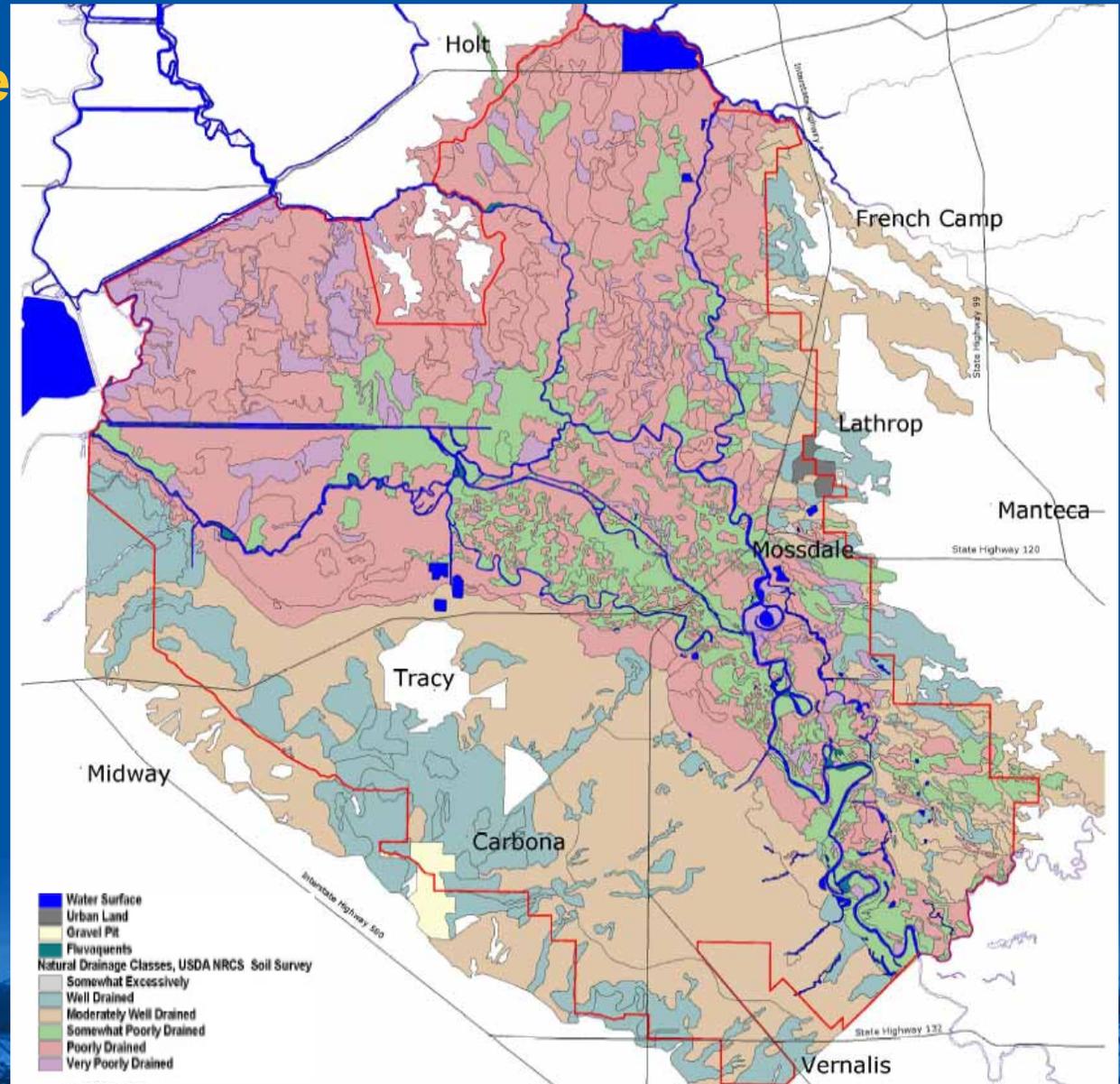
8,712 acres

7.2% of SDWA cropped acreage
14% increase over 1988 acreage

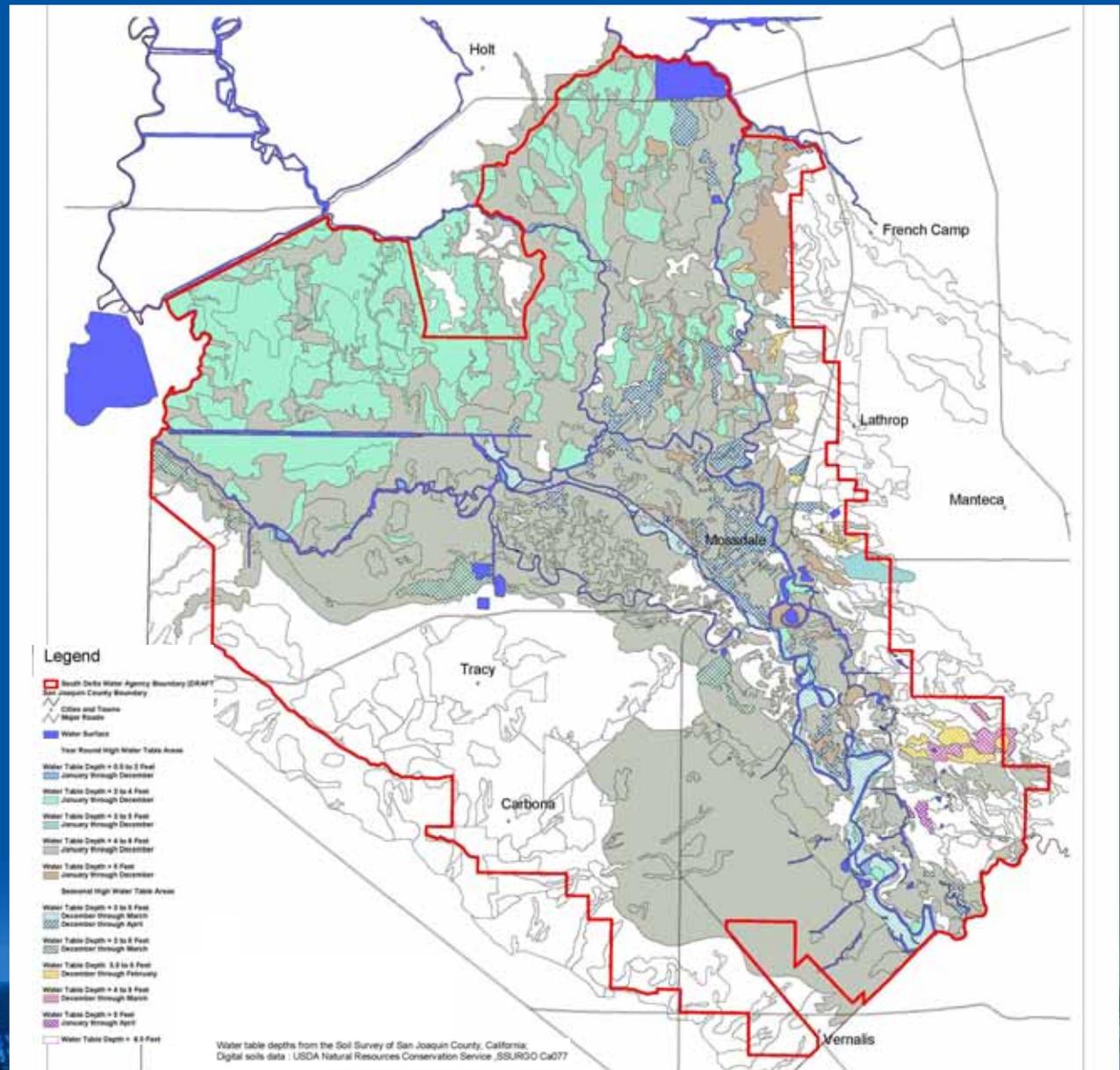
- D1641 compliance location



SDWA Natural Drainage Classes of Soils



SDWA Depth to Water Table



Issues for Further Study of Reasonably Protective South Delta Agricultural Salinity Objective

- Locations beans grown historically in South Delta?
 - majority upstream of compliance locations
- Compatibility of areas within South Delta for growing beans regardless of water quality?
 - Soil Classifications/characteristics suitable for beans
 - Leaching fractions obtainable on suitable soils
 - Suitable depth to groundwater
 - Irrigation practices
- Primary water supply for acreage in beans?
 - Delta Channels, DMC return flow, Groundwater
- Cost of assuring .07 EC vs 1.0 EC in all year types and benefit realized in bean production